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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/701,156	11/04/2003	Yuji Iwata	9319G-000585	5516

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EXAMINER

HSIEH, SHIH WEN

ART UNIT

PAPER NUMBER

2861

DATE MAILED: 12/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/701,156

Applicant(s)

IWATA, YUJI

Examiner

Shih-wen Hsieh

Art Unit

2861

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 October 2005.  
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-12 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 04 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 11-4-03; 8-15-05; 10-13-05  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_

***Response to Amendment***

***Election/Restrictions***

1. Examiner withdraws the election/restrictions, all claims in the instant application are addressed in this office action.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-7 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Those claims are method claims. Steps in a method claim are required to delineate in a step-by-step way that how a process is implemented, e.g., in the instant application, the steps would be: discharging a liquid material toward a substrate; applying an ion blow to the substrate, etc. Please note that, a gerund (verb+ing) is to be used at the beginning of each step (emphasize added).

Those claims are presented in apparatus format. However, a rejection is still made, and appropriate corrections are required to those claims.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1 and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Mizutani et al. (US Pat. No. 6,439,712B1).

In regard to:

Claim 1:

Mizutani et al. teach:

A discharging method for a liquid material discharging said liquid material onto a substrate (W1, figs.1-3) from a discharging apparatus (13, fig .1) of the liquid material comprising a discharging head (13a-d, fig. 1) which discharges the liquid material; wherein

at least **after** discharging said liquid material onto said substrate, an ionized wind (provided by the fan 23, infrared heater 21 and suction inlet 22a) is provided toward the liquid material on the substrate, refer to col. 5, lines 11-35 and col. 6, lines 31-37. Since the infrared heater and the fan and a hood (22) provided the suction inlet is disposed at

the downstream side of the printer, therefore, the fixation of the image by the infrared heater and the fan is after the formation of image on the medium W1.

Claim 11:

An electronic device in which one part of a constituent elements is formed using a discharging apparatus according to claim 1.

Rejection:

P1, in fig. 1 can be considered as one part of a constituent element.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizutani et al. in view of Makoto et al. (JP 11-281810, from IDS dated Nov. 4, 2003).

In regard to:

Claim 2:

The device of Mizutani et al. DIFFERS from claim 2 in that it does not teach:  
wherein said substrate comprises a easily chargeable constituent elements, and  
before discharging said liquid material, an ionized wind is provided on said  
substrate.

Mizutani et al. teach a substrate W1 without further elaborate the substrate. Makoto et al. teach a substrate (42, fig. 4) is used to manufacture a color filter by ink jet technology, and an ion wind is supplied to the substrate before ink jet begins, the color filter can be used, e.g., in a Thin Film Transistor (TFT) color liquid crystal panel, this TFT color liquid crystal panel is actually the intended use of the color filter, and the TFT can be seen as the easily chargeable constituent elements, and carries lesser patentable weight.

Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the device of Mizutani et al. to incorporate the ion blower to blow ion wind toward the substrate to discharge electrostatic charges on the substrate before ink jet begins as taught by Makoto et al. for the purpose of avoiding bending in ink discharge from an ink jet head due to electrostatic charges on the substrate.

Claim 3:

wherein said easily chargeable constituent elements is an active element.

Rejection:

This claim is rejected on the basis as set forth for claim 2 discussed above. Because a substrate such as the substrate 42 in Makoto et al.'s invention is just a color filter manufactured under ink jet technology. An active element such as a TFT (thin film transistor) color liquid crystal panel has to be used in conjunction of the color filter. Therefore, an active element is still an intended use of the substrate.

Claim 4:

A discharging method for a liquid material according to claim 1, wherein said liquid material is made of an easily chargeable constituent elements, and before discharging said liquid material, an ionized wind is provided on said substrate.

Rejection:

This claim is rejected on the basis as set forth for claim 2 discussed above.

An ultra-violet (UV) ink is generally used in ink jet printer. UV ink can be considered as an easily chargeable constituent elements. Various kinds of ink can be used in ink jet printer. Therefore, UV ink is one of the selections among that ink, and is considered as an intended use of the ink, therefore, carries lesser patentable weight.

Claim 5:

A discharging method for a liquid material according to claim 4, wherein said liquid material composed of said easily chargeable material is a metal wiring material.

Rejection:

This claim is rejected on the basis as set forth for claim 3 discussed above.

8. Claims 6-8 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Makoto et al. in view of Akahira et al. (US pat. No. 5,847,723).

In regard to:

Claim 6:

Makoto et al. teach ion wind (45, fig. 4) blows toward a substrate (42, fig. 4) before ink jet by (43, fig. 4) begins.

The device of Makoto et al. DIFFERS from claim 6 in that it does not teach:

the substrate comprising an easily chargeable constituent elements.

Akahira et al. teach in their fig. 3 a color filter (10) is assembled in a Thin Film Transistor (TFT) color liquid crystal panel. A TFT is considered as an easily chargeable constituent elements.

Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the device of Makoto et al. to include the TFT color liquid crystal panel and the color filter is assembled in the TFT color liquid crystal panel for the purpose of eliminating any electrostatic charges may have existed in the TFT by the ion wind.

Claim 7:

A discharging method for a liquid material according to claim 6, wherein said easily chargeable constituent elements is an active element.

Rejection:

TFT is an active element.

Claim 8:

A discharging apparatus for a liquid material, comprising:

a substrate holding part for holding a substrate;

a discharging head for discharging the liquid material onto said substrate; and

an ionized wind producing means for providing an ionized wind on said substrate,

and

said substrate comprises an easily chargeable constituent elements.

Rejection:



This claim is rejected on the basis as set forth for claim 6 discussed above. In this claim, the substrate holding part is (41, fig. 4), and the discharge head is (43, fig. 4).

Claim 12:

An electronic device in which at least one part thereof is made using a discharging apparatus of a liquid material according to claim 8.

Rejection:

The TFT can be considered as an electronic device.

9. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Makoto et al.

A discharging apparatus for a liquid material comprising:  
a substrate holding part for holding a substrate;  
a discharging head for discharging the liquid material onto said substrate; and  
an ionized wind producing means for providing an ionized wind onto said substrate, and  
said liquid material is an easily chargeable material.

Rejection:

This claim is rejected on the basis as set forth for claim 8 discussed above, except said liquid material is an easily chargeable material. A liquid material such as ink, which has a type of ink called ultra-violet (UV) ink, which can be considered as an easily chargeable material. The UV liquid ink used in an ink jet printer is considered as

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an intended use of the discharged liquid material, and therefore, carries lesser patentable weight.

10. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mizutani et al.

A discharging apparatus for a liquid material comprising:

a substrate holding part for holding a substrate;

a discharging head for discharging the liquid material onto said substrate;

an ionized wind producing means for providing an ionized wind onto said substrate; and

an exhaust means provided along a direction where said ionized wind from said ionized wind producing means is blowing.

Rejection:

This claim is rejected on the basis as set forth for claim 1 discussed above. In this claim, the substrate holding part is (11, fig. 1), refer to col. 4, lines 60-66.

Mizutani et al. also teach exhaust means (22f, fig. 1, called exhaust chamber), which is used to exhaust the ionized wind, refer to col. 6, lines 14-43. However, the device of Mizutani et al. DIFFERS from claim 10 in that it does not teach:

the exhaust means is provided along a direction where said ionized wind from said ionized wind producing means is blowing.

Mizutani et al. teach the generation of ionized wind, and the place where the ionized wind can be exhausted, therefore, whether the exhaust means is arranged in a

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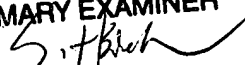
direction of the ionized wind blowing or an exhaust arrangement as taught by Mizutani et al., the ionized wind will exhaust equally in either case.

The manner of operating the device does not differentiate apparatus claim from the prior art, refer to MPEP 2114. In this case, whether the exhaust means is arranged in line with the blowing wind or not is considered as a manner in arranging the exhaust means.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shih-wen Hsieh whose telephone number is 571-272-2256. The examiner can normally be reached on 7:30AM -5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, S D. Meier can be reached on 571-272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**SHIH-WEN HSIEH**  
**PRIMARY EXAMINER**  
  
Shih-wen Hsieh  
Primary Examiner  
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Dec. 8, 2005